DOCUMENT RESUME

ED 036 892 24 EA 002 758

TITLE	ERIC Abstracts: A Collection of ERIC Document Resumes on Program Budgeting and Cost Analysis. ERIC Abstract Series Number Five.
INSTITUTION	American Association of School Administrators, Washington, D.C.; Oregon Univ., Eugene. ERIC Clearinghouse on Educational Administration.
SPONS AGENCY	Office of Education (DHEW), Washington, D.C. Bureau of Research.
BUREAU NO	BR-8-0353
PUB DATE	Jan 70
CONTRACT	OEC-0-8-080353-3514
NOTE	34p.
AVAILABLE FROM	American Association of School Administrators, 1201 Sixteenth St., N.W., Washington, D.C. 20036 ($2.00, quantity discounts)
EDRS PRICE	EDRS Price MF-$0.25 HC-$1.80
DESCRIPTORS	*Abstracts, *Annotated Bibliographies, *Bibliographic Citations, *Cost Effectiveness, *Program Budgeting, Program Costs

ABSTRACT

ERIC abstracts on program budgeting and cost analysis are compiled that were announced in RIE through October 1969. The key terms used to compile this collection are "cost effectiveness," "program budgeting," and "program costs." The following information is presented for each document: Author, title, place of publication, publisher, publication date, number of pages, ERIC document ("ED") number, price and availability, and abstract. A subject index is cross-referenced with the document listing. Fifty-one citations are listed. (MK)

ED036892

AASA

ERIC Abstracts on:

Program Budgeting and Cost Analysis

ERIC 002 758

ED036892

ERIC ABSTRACTS:

A Collection of ERIC Document Resumes on

PROGRAM BUDGETING AND COST ANALYSIS

Compiled by

the

ERIC Clearinghouse on
Educational Administration
University of Oregon
Eugene, Oregon 97403

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

January 1970

The ERIC Clearinghouse on Educational Administration operates under contract with the Office of Education of the United States Department of Health, Education and Welfare. This bibliography was prepared pursuant to that contract. Contractors undertaking such projects under government sponsorship are encouraged to express freely their judgment in professional and technical matters. Points of view or opinions do not, therefore, necessarily represent official Office of Education position or policy.

ERIC Abstracts Series, Number Five

Published by

American Association of School Administrators
1201 Sixteenth Street, N.W.
Washington, D.C. 20036

Single copy, $2.00

Unless otherwise specified, prices quoted are for single copies and are subject to the following discounts on quantity orders of the same publication shipped to one address: 1 copy at list price; 2 to 9 copies, 10%; 10 or more copies, 20%. Postage charged on billed orders.

PREFACE

The Educational Resources Information Center (ERIC) is a national information system operated by the U.S. Office of Education. ERIC serves the educational community by disseminating educational research results and other resource information that can be used in developing more effective educational programs.

The ERIC Clearinghouse on Educational Administration (ERIC/CEA), one of 19 such units in the ERIC system, was established at the University of Oregon in 1966. The Clearinghouse collects, indexes, and abstracts documents concerned with leadership, management, and structure of public and private educational organizations on the elementary and secondary education levels. Documents processed by ERIC/CEA are announced, together with documents processed by the other ERIC clearinghouses, in Research in Education (RIE), ERIC's monthly index and abstract catalog. RIE is available in many libraries and by subscription for $21 a year from the U.S. Government Printing Office, Washington, D.C. 20402. Most of the documents listed in RIE can be purchased through the ERIC Document Reproduction Service, operated by The National Cash Register Company.

In addition to acquiring and processing documents, the Clearinghouse has another major function, that of information analysis and synthesis. ERIC/CEA prepares bibliographies, literature reviews, state-of-the-knowledge papers, and other interpretive research studies on topics in its educational area.

The ERIC Abstracts series is the result of a cooperative arrangement between ERIC/CEA and the National Academy of School Executives (NASE) of the American Association of School Administrators. The abstracts are compiled by ERIC/CEA to provide participants in a series of NASE-sponsored seminars with an up-to-date collection of ERIC materials on subjects to be presented in these seminars. Additional copies of the abstracts are published by AASA and distributed across the country to school administrators and others interested in educational administration.

Philip K. Piele
Director

INTRODUCTION

Since the beginning of ERIC in 1966, more than 20,000 documents have been announced in ERIC's monthly catalog, Research in Education (RIE). Of this total, about 1,000 documents have been processed by this Clearinghouse. So extensive is this growing collection of documents that we thought it would be useful to compile separate lists of ERIC documents on a number of critical topics in educational administration. Published separately, these selected lists of documents comprise the ERIC Abstracts series.

To compile each list, a search is made of the RIE indexes, using key terms that define the topic being searched. The terms used to compile this collection of documents on program budgeting and cost analysis are PROGRAM BUDGETING, COST EFFECTIVENESS, and PROGRAM COSTS. Relevance to the topic is the only criterion for listing a document. The listing is complete for all issues of RIE through October 1969. A majority, but not all, of the listed documents were processed by this Clearinghouse.

Based on the document resumes in RIE, the following information is presented for each document: The basic bibliographic data (including author, title, place of publication, publisher, publication date, and number of pages); the ERIC document ("ED") number; the price of the document, if it is available from the ERIC Document Reproduction Service; and the abstract. The documents are listed alphabetically by the authors' last names and are numbered.

A subject index, beginning on page 26, is cross-referenced with the document listing. The subject terms, arranged in alphabetical order, are identical to those contained in RIE's subject index.

How to Order ERIC Documents

Most of the documents listed on the following pages can be ordered from the ERIC Document Reproduction Service. If a document is available from EDRS, its prices, for both hard copy and microfiche, are cited immediately after the document's "ED" number. To order documents from EDRS, indicate:

- the ED numbers of the desired documents (titles need not be furnished),
- the type of reproduction desired--hard copy (HC) or microfiche (MF), and
- the number of copies being ordered.

Payment must include a special handling charge of 50 cents on all orders, and must accompany orders totaling less than $5.00. Also add applicable sales tax or submit tax exemption certificate when ordering from any State having a sales tax. A 25% service charge, calculated to the nearest cent, must accompany orders from outside the United States, its territories, and possessions.

Address requests to:

ERIC Document Reproduction Service
The National Cash Register Company
4936 Fairmont Avenue
Bethesda, Maryland 20014

1. Abt, Clark C. A cost-effectiveness model for the analysis of Title I ESEA Project Proposals, part I-VII. Cambridge: ABT Associates Inc., December 9, 1966. 124p. ED 013 281 MF $0.50 HC $6.30.

Seven separate reports describe an overview of a cost-effectiveness model and five submodels for evaluating the effectiveness of Elementary and Secondary Education Act Title I proposals. The design for the model attempts a quantitative description of education systems which may be programed as a computer simulation to indicate the impact of a Title I project on the school, the students, and the community. The overall cost-effectiveness model focuses on changes in student achievement, attitudinal and environmental factors influencing achievement, and social behaviors and community impacts of improved achievement in the disadvantaged. The five submodels comprising the overall model are (1) school, (2) instructional process, (3) community interactions, (4) costs, and (5) cost-effectiveness. The school submodel represents the process in which four student types (white and nonwhite with family incomes above and below $2,000) and education resources (teachers, equipment, etc.) are converted into better-educated individuals. The instructional process submodel indicates the student achievement and attitude changes resulting from Title I programs. The community interactions submodel estimates the impact on seven community variables of changes in the educational system due to Title I programs. The cost submodel accounts for both the direct and indirect costs of Title I programs. The effectiveness submodel analyzes the output of the results of the other submodels. One of these seven reports describes the Office of Education cost-effectiveness simulation.

2. Abt, Clark C. Design for an education system cost-effectiveness model. November 1967. 32p. ED 025 044 MF $0.25 HC $1.70.

An elementary and secondary education cost-effectiveness model is designed emphasizing evaluation of ESEA Title I program for the disadvantaged. Focusing heavily on student achievement, the model presents a means for evaluating by computer simulation the relative school, student, and community effects and associated costs of alternative Title I programs on the students and based on the needs of the computer. The four elements of the model and their submodels are as follows: Input (cost); immediate Title I effects (instructional process); longer-range effects (school flows, dropout and truancy calculation, course of study selection, and community effects); and output (effectiveness outputs).

3. Abt, Clark C., and Miller, Peter S. Design for an elementary and secondary education cost-effectiveness model. Volume I, model description. Volume II, the user's guide. Cambridge, Massachusetts: Abt Associates Inc., June 30, 1967. 231p. ED 014 152 MF $1.00 HC $11.65.

A model intended to predict the relative cost-effectiveness of alternative educational improvement programs within the same school-community setting is developed. The model is an attempt to aid in decisions concerning alternative programs of Title I of the Elementary and Secondary Education Act of 1965. Costs are estimated from budget allocations. Three types of educational effectiveness measures are used: Student group oriented, school oriented, and community oriented. These are utilized in terms of school and student, achievement changes, and community, economic, and social changes. Each of these sets of predicted changes is associated with the estimated costs of the particular program causing those changes, so that each program has a set of cost-effectiveness output measures associated with it. The model uses information about the current school system, the historic performances of selected student subpopulations, the social and academic characteristics of the target population, and the Title I proposed changes in the school environment. Likely short-range changes in students' educational achievement and attitudes are then computed and the effects on longer-range changes in academic achievement, dropout and truancy rates, and community effects are extrapolated. The overall model is divided into four parts: (1) Costs (inputs); (2) instructional process; (3) school flow, dropout and truancy calculations, course of study selection, and community effects; and (4) effectiveness (outputs).

4. Cage, Bob N. Cost analysis of selected educational programs in the area schools of Iowa. Ames: Iowa State University of Science and Technology, 1968. 23p. ED 025 639 MF $0.25 HC $1.25.

To determine relationships between the current-unit-cost-per-student contact hours for post-secondary arts and science transfer curricula and selected vocational-technical programs, the 15 area schools of Iowa were visited personally by the investigator and data were collected from the financial records of the institutions. The cost of each specialized vocational-technical curriculum was compared to the mean cost of educating a student in the arts of science transfer curricula. Some major conclusions resulting from analysis of the 1967-68 data were: (1) Enrollment had the greatest degree of inverse relationship with student cost, (2) administrative and plant operation expenses were contributing factors to differences between schools in student costs, (3) instructional expense was related to enrollment and student costs, (4) rental of buildings on some campuses increased costs, (5) the

vocational-technical programs were more expensive than were the arts and science transfer curricula, and (6) adequate financing is necessary for junior colleges considering vocational-technical programs.

5. Case, C. Marston, and Clark, Stephen C. A bibliographic guide to operations analysis of education. Washington, D.C.: Division of Data Analysis and Dissemination, National Center for Educational Statistics (DHEW), September 15, 1967. 22p. ED 025 851 MF $0.25 HC $1.20.

   This bibliography lists 155 books, articles, monographs, and other studies on operations analysis in education. The criteria for inclusion are that the study be quantitative and analytical and use techniques of operations research, systems analysis, management science, program planning and budgeting, benefit analysis, cost analysis, benefit-cost analysis, cost effectiveness analysis, multivariate statistical methods, economics, or computer science. A list of six bibliographies, which include most of the studies cited, and a list of 38 Technical Notes of the Division of Operations Analysis that are available through ERIC are appended.

6. Cook, Desmond L. The impact of systems analysis on education. Paper presented at Seminar on Systems Analysis--Temple University, Philadelphia, Pennsylvania, April 18, 1968. Columbus: Educational Research Management Center, Ohio State University. 12p. ED 024 145 MF $0.25 HC $0.70.

   The nature and extent of systems analysis in education are discussed in terms of the following specific applications: (1) Instructional systems where the concern is with the components of the system (e.g., teachers, students, material to be taught, or audiovisual systems) and their interaction in the learning process, (2) project management systems for the planning and controlling of a wide variety of educational projects, (3) management information systems for better decision-making by chief school officials, (4) planning-programing-budgeting systems for selecting among alternatives to reach program goals, and (5) operations research which attempts to identify the relevant variables making up the total system and subsystems and to secure quantitative data for each variable. Two problems involved in discussing systems analysis in education--terminology and the difficulty of securing evidence about its impact and application--are outlined. Warnings and recommendations regarding the role of systems analysis in education are presented.

7. Cook, Desmond L. An overview of management science in educational research. Paper presented at international meeting of the Institute of Management Sciences--Cleveland, Ohio, September 11-13, 1968. 26p. ED 025 002 MF $0.25 HC $1.40.

   Management science is defined as the basic process or function of rational decision-making. The concept of educational research is expanded to include use of new management techniques developed by the private sector which are adaptable to decision-making in the total educational context. Four trends in the field of educational research are briefly reviewed: (1) Increasing use of scientific problem-solving methods; (2) increasing use of management information systems; (3) increasing emphasis on long-range planning to correlate the educational system with political, economic, and social subsystems for more effective human resource development; and (4) increasing use of systems concepts.

8. Corazzini, A. J., and others. Vocational education, a study of benefits and costs (a case study of Worcester, Massachusetts.). New Jersey: Princeton University, August 31, 1966. 133p. ED 010 296 MF $0.75 HC $6.75.

   The study was made to assess the economic value of the vocational-technical school as an area resource. A framework for analysis was set up which treated vocational education as an investment which competes for community funds. Detailed descriptions were made of such influential factors as (1) kinds of costs and benefits which accompany any local investment in education with particular attention to vocational education, (2) institutional setting of the program selected for study, and (3) total resource costs of various vocational programs. Data were analyzed to determine the value of the vocational high school and post-high school vocational school as a means to (1) prevent dropping out, (2) increase lifetime earnings, (3) increase geographic mobility of graduates, and (4) increase intergenerational movement of workers. Contributions of the schools were marginal in the first three areas and only relatively successful in the fourth.

9. Crandall, Robert Hunter. Cost benefit analysis in a university setting: The housing of students. 292p. June 1968. ED 028 589. Not available from EDRS. (Available from University Microfilms, 300 N. Zeeb Road, Ann Arbor, Michigan 48106, order number 69-3586, MF $3.70; Xerox $13.05).

   A linear model, based on the theory of constrained choice, is constructed to aid in long-range planning for student housing to indicate

what the "best" arrangement of the total system of housing university students might be. It is emphasized that the model incorporates in its system all modes for housing students (including off-campus) and not just the residence halls. The objective function chosen for the linear program in the study was cost minimization. A comparative economic analysis of the cost of various modes of housing a student is presented as the basis for the parameter values adopted in the formal linear model. The application of the housing model to four different California university campuses demonstrated that the linear model can be adapted, with reasonable ease, to give a meaningful reflection of the major variables to be recognized in forming a housing policy. Books and articles concerned with student housing and economic theory are included in the bibliography.

10. Davie, Bruce F. Using benefit-cost analysis in planning and evaluating vocational education. November 1965. 20p. ED 016 077 MF $0.25 HC $1.10.

Basic elements involved in analysis by rational resource allocation are applied to vocational education. To improve the efficiency of use of allocated resources, the relationships between application of resources to a particular program and attainment of objectives can be determined by benefit-cost analysis, the ratio of the present value of future benefits to the present value of future costs. Costs and benefits of particular vocational programs must be analyzed from the viewpoints of both the individual student and society. The derived ratios are the societal benefit-cost ratio of a program. A variation of benefit-cost analysis treats benefits as an unknown in an equation including known costs, number of students, and an arbitrarily selected benefit-cost ratio. Some limitations of using benefit-cost analysis for evaluating vocational education and as a basis for making public expenditure decisions in the field are (1) different people have different money values so that what is dollar value to one may not be to another, (2) the search for the best possible programs is limited to only those proposed, (3) it is difficult to assess the value of intangible benefits which cannot be measured in dollar terms, and (4) considering program value from only a local viewpoint may result in maintaining or rejecting one in conflict with the aggregate or national interest. Despite possible limitations, use of benefit-cost analysis appears desirable in evaluating and planning vocational education at the State and local levels because it identifies current or proposed programs in which probable economic benefits do not justify the actual or prospective expenditures. The appendix contains a precise formulation of the benefit-cost analysis methods.

11. Dueker, Richard L., and Altman, James W. An analysis of cost and performance factors in the operation and administration of vocational programs in secondary schools. Final report. American Institute for Research in Behavioral Sciences, October 1967. 49p. ED 019 516 MF $0.25 HC $2.55.

In a study to identify the kinds of cost and related data that can be obtained to aid planning and evaluating vocational education, the attrition of the sample of 16 comprehensive and 16 vocational schools asked to participate and the data collection problems made the authors skeptical of any substantive results. Limited data were collected from schools by means of questionnaires and interviews and from earlier studies. An organized body of performance data was not available at any of the schools, and available cost data did not readily lend themselves to meaningful analysis. Findings, if accepted at face value, suggested the following conclusions: (1) According to data reported by five vocational schools and four comprehensive schools, the general cost of education in comprehensive schools was lower than in vocational schools for 1961-62, but rose much more rapidly to approximate the cost in vocational schools by 1965-66; and (2) data from four comprehensive schools showed that the costs of academic-general (nonvocational) education were higher than for vocational education in comprehensive high schools for the fiscal years 1961-62 and 1963-64. It did not appear likely that available cost or performance data would serve the long-range needs of educational evaluation and planning. It was recommended that the U.S. Office of Education undertake a feasibility and preliminary design study for an evaluation and planning information system which would encompass all education, not only vocational education.

12. Finch, James N. Testing the cost yardstick in cost-quality studies. New York: Institute of Administrative Research, Columbia University, November 1967. 5p. ED 023 151 MF $0.25 HC $0.35.

To discover how costs affect quality, 16 different methods of computing educational costs are developed and correlated with a cluster of "quality related" factors (QRC). Data for the correlation were obtained from 1,055 city school districts in 48 States. The QRC is composed of staffing adequacy variables, measures of teacher quality, and provisions for instructional materials. To study the effect of using various weighting factors in cost-quality studies, the 16 expenditure yardsticks were subjected to weighting which compensated for secondary ADA figures. The best predictor of educational quality was total expenditures less capital outlay and the measure. The study questions the validity of the cost measures in cost-quality studies where weighting for secondary school pupils was used.

13. Foster, Charles W. Annual volume of proceedings, addresses, and research papers of the annual meeting and educational exhibit of the Association of School Business Officials of the United States and Canada. 1968. ED 019 738. Not available from EDRS. (Available from the Office of the Executive Secretary, Association of School Business Officials of the United States and Canada, 2424 West Lawrence Avenue, Chicago, Illinois 60625; 440p., $5.00.)

A verbatim reporting of presentations made at the 53rd annual meeting of the Association of School Business Officials of the United States and Canada, held in Miami Beach, Florida, October 14-19, 1967, includes the keynote address by the Honorable Barry G. Lowes, Chairman of the Metropolitan Toronto Board of Education, on purposes, problems, and proposals for effective education. Other meeting addresses are also included, as are reports of forums and panel discussions dealing with difficulties faced by school business officials. Nineteen section meetings were addressed by leaders representing business and education. Papers read are reported under section hearings as follows--general obligation school bonds, personnel management, professionalization, program budgeting, school house planning and construction, private school management, accounting and finance, junior college business management, building maintenance, and operations, management techniques and development, office management, purchasing and supply management, university training of school business officials, data processing, insurance management, legal basis for a preservice training program, product information, school foods service management, and transportation. Articles and by-laws of the association and its research corporation are appended.

14. Gurin, Arnold, and others. Cost analysis in day care centers for children. Financial report to U.S. Children's Bureau. Waltham, Massachusetts: Brandeis University, May 31, 1966. 212p. ED 020 559 MF $1.00 HC $10.70.

The purpose of this project was to develop and test a method for analyzing the cost of day care centers on a comparable basis. The methodology employed was the selection of a group of representative centers in the Boston area and use of these as a testing ground. The empirical findings of the six centers selected for study are analyzed to provide a measure of the general utility of the cost analysis procedure. These findings are presented under three general topics: (1)Findings based on the cost analysis including descriptions of the schools studied and problems of comparability, (2) findings based on a time analysis concerning the distribution of salary costs on the part of personnel who performed the multiple functions, and (3) cost of programs in relation to other factors, including socioeconomic

differences among families. Recommendations are made concerning both cost analysis procedures themselves, and personnel policies.

15. Hartley, Harry J. Economic rationality in urban school planning--the program budget. Urban Education v.3, n.2 (1967), p.39-51. ED 017 564 Not available from EDRS.

Economic analysis should be applied to school planning to provide a general framework within which educational objectives can be accomplished in the most reasonable manner. Systems analysis methods integrate the differing values of educators into common objectives. Successful use of program budgeting depends on (1) program definition; (2) programing, systems analysis, and budgeting; (3) information support, evaluation, and program revision. Examples of program budgeting in urban school systems and in noneducational settings are discussed and a list of advantages of the program budget in education is provided.

16. Hartley, Harry J. PPBS-current research and programmatic implications for collective negotiations. Paper presented to the American Educational Research Association--Chicago, Illinois, February 8-10, 1968. 10p. ED 018 856 MF $0.25 HC $0.60.

Planning-programing-budgeting systems (PPBS) are intended to facilitate the kinds of information and data analysis which furnish administrators with a more complete basis for rational choice. Neutral on the issues of cost reduction, PPBS is designed to foster economic efficiency. Advantages which it offers over traditional practices include: (1) Program-oriented information, (2) analysis of possible alternative programs and objectives, (3) long-range plans and evaluative criteria, (4) use of contemporary management science concepts to improve utilization of teacher competence, (5) structural flexibility and participatory planning, and (6) report of school programs in the school budget document. Successful installation of the program budgeting format is dependent upon completion of three kinds of research activities: (1) Program classification, structural design, and planning matrices; (2) programing, systems analysis, and budgeting; and (3) information support, evaluation, and program revision. The key to resolving recent educational disputes has been largely financial. Focus upon programs would allow teachers, boards of education, administrators, and the general public to seek resources for needed programs, rather than for selfish needs.

17. Hinds, Richard H. Educational program planning and related techniques. Annotated bibliography. Unpublished report. Miami: Dade County Public Schools, March 1969. 15p. ED 029 375 MF $0.25 HC $0.85.

This annotated bibliography contains 97 entries to aid those interested

in the problems and techniques of comprehensive program planning. It is designed for educators who feel that systems analysis, cost-benefit studies, and mathematical models have some relevance in the planning processes of a large school system. Three major sections are included: (1) Educational Program Planning, including studies dealing with the needs and problems of comprehensive and long-range planning by educational institutions; (2) Program Analysis Techniques, containing entries dealing with the use of specific techniques such as systems analysis and operations research in the analysis of educational and related problems; and (3) Planning-Programing-Budgeting Systems, including documents applying principally to the interface between planning and budgeting.

18. Hirsch, Werner Z. Program budgeting for education. Paper presented at the national meeting of the Operations Research Society of America--29th, Santa Monica, May 19, 1966. 44p. ED 011 145 MF $0.25 HC $2.30.

The application of program budgeting to education is recommended. A national-level program budget example is presented, with suggestions for obtaining more effective management of education. Financing of education in the United States is currently undertaken by more than 40 agencies of the Federal government, 50 State governments, and more than 30,000 school districts. Efficient and equitable planning and budgeting is thus a formidable task. Further research and development in program budgeting is suggested to include (1) explicit delineation of goals; (2) better identification, measuring, and packaging of costs and benefits; (3) development of backup administrative organization; and (4) more attention to future environments. The report recommends the establishment of a Federal department of education.

19. Hirschl, Harry Hamel. Some economic considerations and a procedure for a university cost study. Lafayette, Indiana: Purdue University, June 1965. 70p. ED 025 847 MF $0.50 HC $3.60.

A study of the nature, product, expenses, and income of a university develops a methodology to translate a university's statement of these descriptive data into an analytical cost study framework. The product of a university is defined as the intellectual growth of students and staff. Since this product can not be quantified, costs are assigned to class units (meetings of students and teacher) which are proxy variables representing the product. Information requirements for the construction of total cost schedules relating to the degree-gaining process are formulated and indirect examples are given. Methods for allocating and distributing direct and indirect expenses and revenues are analyzed within the cost model framework. By introducing the concept

of marginal cost functions into the framework, it becomes possible to base predictions of fiscal requirements on each institution's policies and practices. Implications of this procedure are examined to show how the data can be transformed into useful studies of (1) factors influencing the cost of classes, (2) estimation of future expenses based upon changing student population, and (3) institutional or interinstitutional per student cost comparisons.

20. Hu, Teh-wei, and others. A cost-effectiveness study of vocational education. Final report. University Park, Pennsylvania: Institute for Research on Human Resources, Pennsylvania State University, October 1968. 317p. ED 029 093 MF $1.25 HC $15.95.

This study was concerned with the optimum allocation of public resources in education, and involved a comparison between vocational-technical education and an alternative curriculum for non-college attending students. Major steps in the study were: (1) Identification of costs and benefits, (2) collection of representative data, (3) determination of appropriate criteria for investment decisions, (4) statistical analysis, (5) calculation of the return to the investment, and (6) consideration of limitations and related issues. Data were collected in three cities. The dependent variables were the average monthly earnings before and after taxes, 1 and 6 years after graduation. The independent variables were (1) city of graduation, (2) type of curriculum, (3) sex, (4) IQ, (5) race, (6) marital status, and (7) father's education. Other nonmonetary and noneconomic benefits and performance characteristics such as voting behavior and economic aspirations were also examined. A detailed discussion of conceptual, statistical, and methodological considerations is included, in addition to an extensive discussion of specific findings.

21. Hubbard, Robert E. An approach to institutional cost analysis. Experimental Journal of Education, v. 31, n. 2 (December 1962). ED 018 105 Not available from EDRS. (Available from Dembar Educational Research Services, Inc., P. O. Box 1148, Madison, Wisconsin 53701.)

This study describes a 1960 evaluation of instructional costs by student level at Wayne State University in Detroit. Direct costs of instruction were determined by amount of faculty time devoted to instruction and reported as a percentage of total faculty time. A cost per credit hour was obtained by student level. Data were computerized. Computer output included (1) a cost analysis, (2) cost per student credit hour, (3) percent of time, (4) credit hour and contact hour load, and (5) percent of time assigned to instructional units. The costs of various aspects of library operation were also analyzed. The report concluded that a study of this nature should be done thoroughly the first

time and replicated often. The use of faculty judgment to determine the time allotments was considered a weakness by the author. The statistical methods were included.

22. Illinois State Board of Higher Education. Cost study manual 1965-66. Springfield: Illinois State Board of Higher Education, December 1966. 47p. ED 029 464 MF $0.25 HC $2.45.

Procedures are presented for use in reporting costs for institutions of higher education in Illinois. Following the definition of various accounting functions, the scope of the cost and statistical report is delimited, and specifications are presented for the collection of data on students, courses, academic faculty records, and academic faculty assignments. A proposed statistical report blank is included along with instructions. The disciplinary areas, under which costs are to be reported, are listed, and step by step procedures are presented for the distribution of costs by department or division, for a given college or school, for the campus, for all university overheads, and for organized activities. A format for cost study reporting is presented in the appendix along with information on the use of the cost and statistical study in budget formulation and review.

23. James, H. Thomas. The impending revolution in school business management. Paper presented at the Association of School Business Officials--Houston, Texas, October 22-24, 1968. 17p. ED 025 019 MF $0.25 HC $0.95.

The development of logically sophisticated analytical models in a growing number of fields has placed new emphasis on efficiency in school management. Recent systems models guiding the longrun analysis of school management in terms of efficiency--through cost-benefit studies, systems analysis, and program planning and budgeting systems--are in sharp contrast to the traditional, conservative, shortrun process of school budgeting and accounting designed primarily to safeguard public monies. Cost-benefit analysis offers a systematic method by which benefit maximizing and cost minimizing choices can be made for a particular system and set of objectives. Systems analysis encompasses cost-benefit analysis within its larger framework and allows the choice of alternative purposes for the system under study as well as choices among alternative materials, personnel, and management procedures. Program planning and budgeting systems are the most innovative, comprehensive, and change-inducing of these approaches. They focus attention on the choice of (1) objectives to be achieved, (2) the system by which to achieve these objectives, and (3) the plan which will accomplish the objectives at the lowest cost.

Application of these models, which is imperfect at present, has the advantage of requiring a careful and disciplined analysis of school management problems.

24. Joice, Donald K. Ground maintenance cost report. Speech presented to Pacific Coast Association of National Association of Physical Plant Administration of Colleges and Universities--15th annual meeting, Pasadena, California, November 1966. 11p. ED 027 698 MF $0.25 HC $0.65.

    A grounds maintenance study was accomplished over the period of March 1965 through February 1966 to (1) determine current grounds maintenance cost distribution; (2) provide basis for future grounds maintenance budgeting; and (3) provide basic data by which future landscape project designs can be developed to project or reduce maintenance costs. The data are charted for maintenance cost recapitulation by campus zones. Separate cost categories shown are labor, supply and expense, equipment and facilities, total cost per zone per year, and total cost per acre per year. For each campus zone further breakdowns are made by type of ground cover (i.e., grass, shrubs, sealed surface, etc.) and by functional use (parking and improved areas). Some significant conclusions regarding maintenance costs are listed.

25. Judy, Richard W., and Levine, Jack B. Techniques of systems analysis for university planning. In Asa S. Knowles (Ed.), Handbook of College and University Administration, McGraw-Hill, 1969. 37p. ED 028 616 MF $0.25 HC $1.95.

    This chapter of a larger volume discusses the rise of the multiuniversity and the possibilities for planning in systems analysis. The system described is the C.A.M.P.U.S. system, an acronym for Comprehensive Analytical Methods for Planning in University Systems. Three subsystems are discussed: (1) Program planning and budgeting, (2) simulation models, and (3) integrated information system. A variety of applications are suggested under the latter two categories.

26. Katzenbach, Edward L. Planning programming budgeting systems: PPBS and education. Cambridge: New England School Development Council, March 1968. 17p. ED 025 856 MF $0.25 HC $0.90. (Also available from The New England School Development Council, 220 Alewife Brook Parkway, Cambridge, Massachusetts 02138, members $1.00, nonmembers $2.00.

    Continuous change in education is requiring educational administrators

to plan for the distant future with as much precision as they now do for the immediate future. Recently, major advances in the planning-budgeting process have become available to educators in the form of PPBS. Fiduciary budgets, which have been used in most schools since the early 1900's, have the following problems: (1) They are incremental budgets relying heavily on what was done the previous year, (2) they develop meaningless comparative data, (3) they do not reveal the source of funds, and (4) they are written only for the following year. Program budgeting, on the other hand, offers the administrator the opportunity to design a longterm plan for creative instruction. PPBS delineates program integration and highlights alternatives in a new way by aligning objectives and costs. PPBS differs from present budgeting procedures in that it (1) compels administrators to give some thought to alternatives, (2) stresses the significance of minor costs over a long period of time, (3) helps relate the cost of a program to its merits, and (4) links teacher aids, supporting activities, research, and development to subject matter in terms of time and cost.

27. Kaufman, Jacob J. Cost-effectiveness analysis as a method for the evaluation of vocational and technical education. Paper presented at the annual meetings of the American Vocational Association--Dallas, Texas, December 10, 1968. 18p. ED 029 983 MF $0.25 HC $1.00.

It is the purpose of this paper to discuss cost-benefit analysis in terms of (1) its logic and meaning, (2) some of the misconceptions which prevail concerning this method of evaluation, (3) some of the problems and limitations of this method, and (4) the conclusions of a study which attempted to determine whether or not there is a payoff from an investment in vocational and technical education. Cost-effectiveness analysis is an attempt to establish the equivalent of a system of market principles for various types of government activities. One should not talk about education in terms of cost or needs alone. No cost can be justified without a reference to payoff, and the satisfaction of any need cannot be justified without reference to cost. Cost-benefit analysis forces administrators to think through their objectives, concentrate on cost, and think in terms of alternatives. Some misconceptions are: (1) It seeks to conduct education on a least-cost basis, (2) benefits are measured only in dollar terms, (3) some things are not quantifiable, (4) the technique has not been fully developed, and (5) it tends to ignore political considerations. A Pennsylvania study was reported which revealed certain values of vocational-technical programs over other high school curriculums.

28. Knezevich, S.J. The systems approach to school administration: Some perceptions on the State of the Art in 1967. Paper presented at the U.S. Office of Education Symposium on Operations Analysis of Education--Washington, D.C., November 19-22, 1967. 14p. ED 025 853 MF $0.25 HC $0.80.

Concepts which are salient features of the systems approach do not appear to have permeated school administration beyond the threshhold of awareness. Confusion among administrators as to the meaning and potential of the systems approach can be partly attributed to its over-zealous adherents, semantic difficulties among experts, and its application to minor, pedestrian problems. Experts must agree on standard meanings for such terms as systems analysis, program budgeting, programing planning budgeting systems (PPBS), and cost effectiveness, which are alternatively used synonomously and to mean different things. Major policy issues that create the greatest administrative problems must be shown to be susceptible to the systems approach. The potential of this approach for educational administration will have to be publicized through special seminars, conferences, and workshops. Finally, to create readiness for and to stimulate use of the systems approach, improvements in education that will be needed include (1) a clearer definition of educational objectives, (2) use of models for at least parts of school operations, (3) development of quantitative reasoning and analysis capabilities, (4) greater emphasis or generating alternative solutions to problems, (5) increases in school district staffs for planning and systems analysis, and (6) better dissemination of systems concepts and techniques.

29. Kotz, Arnold. Occupational education--planning and programming, volume one. Menlo Park, California: Stanford Research Institute, September 1967. 221p. ED 017 733 MF $1.00 HC $11.15. (Also available from Stanford Research Institute, Rosslyn Plaza, 1611 North Kent Street, Arlington, Virginia 22209,for $6.00.)

Recommendations, conclusions, and position papers based on the results of a diagnostic survey conducted in six States and 11 communities are reported. They concern: (1) Identification of the objectives and goals of occupational education, (2) structuring of alternative programs to achieve them, (3) cost-benefit analysis, and (4) projections of manpower supply and demand. With the survey findings and the position papers as background, an interdisciplinary conference was held at Airlie House with 38 participants including economists, vocational educators, university and research personnel, administrators, systems analysts, and planners to determine the problems associated with planning and programing vocational education. Part I of the report

includes "Major Recommendations and Conclusions," by Arnold Kotz. Part II is concerned with how objectives and goals are determined by States and communities. Objectives identified in the diagnostic survey are discussed. Position papers are: (1) "Objectives and Goals of Occupational Education," by Grant Venn, (2) "Evaluating Vocational Education--Problems and Priorities," by Garth Mangum, and (3) "Problems of Application of the Program Planning and Budgeting System to Education," by Charles Hitch. Part III, concerning alternative programs to achieve occupational education objectives, includes the following papers: (1) "An Educational System for the Seventies," by David Bushnell and Robert Morgan, (2) "An Industrial Approach to Occupational Training," by Wilbur Landis, and (3) "Improved Planning for Vocational and Technical Education--A State Director's Perspective," by Robert Worthington. Transcripts of discussions following some speeches, a list of participants, objectives identified in the survey, steps in the program planning and budgeting approach, and a bibliography of 111 references used in the project are included.

30. Kotz, Arnold. Occupational education--planning and programming. Volume two. Menlo Park, California: Stanford Research Institute, September 1967. 279p. ED 017 734 MF $1.25 HC $14.05. (Also available from Stanford Research Institute, Rosslyn Plaza, 1611 North Kent Street, Arlington, Virginia 22209, for $6.00.)

Additional position papers based on information gathered in the reconnaissance surveys of planning and programing in occupational education, reported in volume one (VT005 041), are presented. Part IV, concerned with program structure and budgeting and their relation to the planning process, includes the following papers: (1) "Current Policies and Practices," by Arnold Kotz, (2) "The Program Budget--its Value to Education at Federal, State, and Local Levels," by Robert N. Grosse, (3) "Budgeting for Vocational-Technical Education," by Thomas G. Fox, and (4) "The Vocational Education Act of 1963--Intergovernmental Fiscal Relations," by Bruce F. David. Part V, an attempt to clarify the theoretical and methodological issues of an economic analysis of vocational education, includes: (1) "Benefit Cost Analysis of Vocational Education--A Survey," by Bruce Davie, (2) "Economic Concepts and Criteria for Investment in Vocational Education," by Ernest Stromsdorfer, (3) "A Benefit-Cost Framework for Education," by Robert Spiegelman, (4) "A Summary Guide for Benefit Cost Analysis," by Einar Hardin, (5) "Manpower Demand and Supply," by Arnold Kotz, (6) "Evaluation of Supply-Demand Projections, Concepts, and Techniques," by Thayne Robson, (7) "Forecasting Occupational Job Requirements," by Norman Medvin, (8) "Manpower

Requirements to Meet National Goals in Research and Development," by Leonard A. Lecht, and (9) "Evaluation" and (10) "Organization for Planning," by Arnold Kotz. A 15-page "Checklist for School Evaluation," a bibliography of 111 references, and transcripts of several group discussions are included.

31. Lindman, Erick L., (Ed.). Approaches to program accounting for public schools. Los Angeles: University of California at Los Angeles, September 1968. 120p. ED 026 727 MF $0.50 HC $6.10.

    This volume contains papers presented at the National Conference on Program Accounting for Public Schools held at the University of California at Los Angeles, in July 1968. The papers describe six public school expenditure classification systems designed to facilitate program budgeting and cost analysis. The account classification systems are those developed by (1) The Midwestern States Educational Information Project, (2) Philadelphia Public Schools, (3) St. Louis Public Schools, (4) Los Angeles City Schools, (5) The California Association of Public School Business Officers, and (6) Erick L. Lindman. In a summary of the conference discussion, 11 issues in the area of program accounting that were identified and discussed at the conference are reviewed.

32. Miller, Donald R. A school district plan of functional organization. Burlingame, California: Operation PEP. 71p. ED 022 251 MF $0.50 HC $3.65.

    A school district plan of functional organization is designed to integrate the functional and the organizational aspects of performance. The plan can be used to seek solutions to three basic management problems: (1) The functions which must be performed in a school district, (2) the plan of organization which should be implemented to facilitate performance, and (3) the management procedures which should be implemented to assure quality and to measure performance. The plan reveals several management tools which can be used to accomplish integration of performance. Another plan, the school district organizational plan, delineates the control and feedback relationships which must be considered in performance integration. Several immediate concerns which the superintendent must appraise before integrating the functional and organizational aspects of performance are discussed.

33. Mood, Alexander M., and Powers, Richard. Cost-benefit analysis of education. Paper presented at the Washington Operations Research Council's Cost-Effectiveness Symposium, March 13-14, 1967. 19p. ED 012 519 MF $0.25 HC $1.05.

Difficulties are encountered when cost-benefit analyses are applied to education. There are problems in the attempt to define an educational goal and in the analysis of educational processes. The Federal government is now engaged in a multitude of projects designed to coordinate research in educational improvement. This entails continued development of educational, information gathering systems where budget programing is extensively used. A third problem arises in the measurement of costs. Despite difficulties involved, optimism exists toward the prospect of developing a comprehensive quantitative model of the American educational system.

34. Mushkin, Selma J., and Cleveland, James R. Planning for educational development in a planning, programming, budgeting system. Washington, D.C.: National Education Association, 1968. 45p. ED 024 154 MF $0.25 HC not available from EDRS. (Available from National Education Association, 1201 Sixteenth Street, N.W., Washington, D.C. 20036 for $1.00.)

    This document discusses planning for educational development by means of a planning-programing-budgeting system. A PPB system is defined and its basic operation is described. Various ways in which the broader purposes of governments may be classified in terms of their objectives are presented with emphasis on how the learning objective might fit into a program structure for government. With this background a PPB system is applied to education as cost effectiveness analysis for learning. Cost effectiveness analysis is defined, measurement of alternative program costs and program effectiveness is described, and the relationship of the two elements is explored. An illustrative example of the process of cost effectiveness analysis is appended.

35. Novick, David. Origin and history of program budgeting. Santa Monica, California: Rand Corporation, October 1966. ED 013 494 Not available from EDRS. (Available from Clearinghouse for Federal Scientfic and Technical Information, Cameron Station, Springfield, Virginia 22314--AD 641 442; $1.00 HC, $0.50 MF.)

    The origin and historical development of program budgeting, which is currently applied to all the executive offices and agencies of the United States Government, is traced. It was recognized and applied as early as 1924 by industry, was used as part of the wartime control system in 1942, and is used today by the Department of Defense. This is a transcription of a talk filmed for the courses sponsored by the U.S. Bureau of the Budget and the U.S. Civil Service Commission for orientation and training in the planning-programing-budgeting system.

36. Ohio State University. Review and synthesis of research on the economics of vocational education. Research 16. Columbus: Center for Vocational and Technical Education, Ohio State University, November 1968. 62p. ED 023 937 MF $0.50 HC $3.20.

The purpose of this publication is to introduce vocational educators and others interested in occupational education to research and writings on the economics of vocational-technical education. Research pertaining to cost-benefit and cost-effectiveness analysis of vocational education and manpower training programs is emphasized. Major sections are devoted to a review of research and writing pertaining to the theory and concepts of the economics of education, the methodoiogical and conceptual problems involved in evaluating vocational-technical education programs using cost-benefit and cost effectiveness models, results of cost-benefit and cost-effectiveness studies of public school vocational-technical programs and manpower training programs, and the use of followup studies as a means of evaluating vocational-technical education programs. Other sections deal with studies of costs and returns from investment in rural technical schools, investment effects of education in agriculture, and the relationship between vocational education and students' propensity to drop out of school. The author's conclusions and recommendations are included. Of the 100 sources cited, the oldest was published in 1962 and most were published since 1966.

37. Payzant, Thomas. Approaches to the analysis of school costs, an introduction. Cambridge, Massachusetts: New England School Development Council, 1967. 14p. ED 025 832 MF $0.25 HC $0.80. (Also available from The New England School Development Council, 220 Alewife Brook Parkway, Cambridge, Massachusetts 02138, NESDEC members, $.50, nonmembers $1.00.)

A review and general discussion of quantitative and qualitative techniques for the analysis of economic problems outside of education is presented to help educators discover new tools for planning, allocating, and evaluating educational resources. The pamphlet covers some major components of cost accounting, cost effectiveness, cost-benefit analysis, systems analysis, cost quality, and program budgeting. Given necessary modifications, these tools are found to have a great potential in applications to education. While adoption of newer techniques is urged, the continued usefulness of older approaches is defended.

38. Pfeiffer, John. Decision making in action. Chapter 2, new look at education: Systems analysis in our schools and colleges. 1968. 26p. ED 025 838 MF $0.25 HC $1.40. (Also available from the Odyssey Press, Inc., North Road, Poughkeepsie, New York 12601, $1.00.)

Developed during World War II, the systems approach evolved rapidly after the war into several new phases, one of which is program budgeting. There is no clear set of rules constructed along do-it-yourself lines associated with the systems approach. There are, however, general procedures which are to be followed. The first step, defining the problem, includes four distinct phases: Defining the system's objectives, obtaining measures of effectiveness, identifying constraints and uncontrollable variables, and identifying controllable variables. After defining the problem, the next three basic steps are to define the subfunctions, to define the alternatives for each subfunction, and to synthesize the subsystems. Next, a model should be developed. Although a model is an abstraction, it is also a highly effective way of coping with reality, and its development calls for and guides data collection. The model must prove itself by predicting results reasonably well. However, in complex situations perfect prediction is rare and the whole system must continually be reexamined and changed as necessary.

39. Piele, Philip K. Planning systems in education. Eugene: Center for Advanced Study of Educational Administration, University of Oregon; ERIC Clearinghouse on Educational Administration, 1969. 5p. ED 025 855 MF $0.25 HC $0.35.

This literature review examines 16 selected documents processed by the ERIC Clearinghouse on Educational Administration that deal with the application of several kinds of planning systems to educational programs. Particular attention is given to planning-programing-budgeting systems (PPBS), program evaluation review techniques (PERT), and various types of planning models.

40. Pinnell, Charles, and Wacholder, Michael. Guidelines for planning in colleges and universities. Volume two. Management and financial planning. Austin: Coordinating Board, Texas Colleges and Universities, July 1968. 128p. ED 024 120 MF $0.75 HC $6.50. (Also available from Texas A & M University Bookstore, College Station, Texas 77843 (only in complete 5 volume set, $25.00.)

This volume presents techniques and details involved in developing the management and program planning and the financial planning phases of a total planning system. Also discussed is a suggested organization

for implementing a planning system. Areas emphasized under management and program planning are (1) institutional objectives, (2) planning reports and organizational units, and (3) the management planning process. The section on financial planning presents a cost model, an income model, and a discussion and a model of planning-programing-budgeting. Organization for planning is discussed with respect to development of the organization, staffing and administrative requirements, and general organizational considerations.

41. Quade, E.S. Cost-effectiveness--some trends in analysis. Paper presented during the short course "Cost-effectiveness, The Economic Evaluation of Engineered Systems"--University of California at Los Angeles, March 27-31, 1967. Santa Monica: Rand Corporation. ED 013 491. Not available from EDRS. (Available from Clearinghouse for Federal Scientific and Technical Information, Cameron Station, Springfield, Virginia 22314--AD 650 129; MF $0.65, HC $3.00.)

    Three methods of cost-effectiveness are discussed--use of computers, mathematics, and expertise. Emphasis is given to the use of expertise. The discussion on expertise judgment is based on papers by O. Helmer which illustrate the Delphi method or Cybernetic Arbitration. Although computer and mathematical analysis (particularly game theory) are becoming increasingly significant in cost-effectiveness analysis, it is the author's opinion that for complex questions, intuition and judgment must continue to supplement systematic analysis.

42. Sell, G. Roger, and others. Appendix W. Cost analysis in teacher education programs. Portland: Northwest Regional Educational Laboratory, October 1968. 14p. ED 026 328 MF $0.25 HC $0.80.

    This paper is an introduction to the basic cost-related tools available to management for planning, evaluating, and organizing resources for the purpose of achieving objectives within a teacher education preparation program. Three tools are presented in separate sections. Part I--on the cost accounting tool for identifying, categorizing, and calculating resources needed to support the operations of the program--includes discussion of cost estimating relationships, sources of cost data, a cost data bank, estimating techniques, and organization of system costs. Part II--on the cost-effectiveness tool for maximizing system effectiveness while minimizing costs--includes discussion of the systems approach, the cost-effectiveness system, and the cost-effectiveness concept (with a diagram). Part III--on the cost-benefit tool, a means of comparing program costs and program benefits--discusses the individual and societal cost-benefit ratios. Included is a 24-item reference list.

43. Smith, Clodus R., and Connolly, John. Proceedings of National Seminar on Program Planning, Budgeting and Evaluation, vocational-technical education. College Park: Maryland University, December 15, 1969. 64p. ED 018 645 MF $0.50 HC $3.30.

Thirty-nine Federal and State educators from 33 States, 23 resource personnel, and 15 staff and chairmen participated in a seminar (1) to develop insights into the principles and process of program planning, budgeting, and evaluation; (2) to involve State, regional, and local staff members; (3) to develop a cadre of knowledgeable vocational educators, and (4) to develop guides and models. Presentations included (1) "Developing Policy and Procedures to Achieve Goals and Objectives," by Joseph Hall; (2) "The War on Poverty," by Harry Hallery; (3)"Framework for Program and Financial Planning," by Grover Durnell; (4) "Resources from Title V for Planning and Developing on Vocational-Technical Education," by Harry Phillips; (5) "Resources from Title III for Planning and Developing Vocational-Technical Education," by Lee E. Wickline; and (6) "Work of the Advisory Council on Vocational Education," by Melvin Barlow. Other presentations on such subjects as budgets, evaluation, program planning, objectives, policy and procedures, and sources and use of data are summarized. An earlier address by Carl D. Perkins and material on the seminar planning units are included.

44. Smith, Lester S. The allocation of financial resources in higher education. Paper prepared for Education 925.35, Autumn Quarter, 1967, at the Ohio State University, Columbus. 30p. ED 017 981 MF $0.25 HC $1.60.

The efficient use of the University's limited financial resources involves administrative decisions that spread across the spectrum of choice. The purpose of this paper is to identify basic concepts involving the allocation of financial resources. The budget is emphasized as a tool with which the decision maker can focus and sharpen his grasp of the alternatives. The budget is defined, its purposes delineated, and the budget process itself is presented in three steps--preparation, adoption, and execution and control. Program budgeting, a more recent budgeting technique, is presented to indicate the systematic approach, further identifying the spectrum of choice. Finally, a brief discussion is included concerning the system simulation model approach for using the computer to improve the allocation of resources of institutions of higher education.

45. Stoller, David S. Abstracts of technical notes. Washington, D.C.: Division of Data Analysis and Dissemination, National Center for Educational Statistics, May 16, 1968. 37p. ED 023 169 MF $0.25 HC $1.95.

This document abstracts 57 Technical Notes of the Division of Data Analysis and Dissemination of the National Center for Educational Statistics which were prepared between May 1966 and April 1968. Among topics discussed are statistical methods, program budgeting, operations analysis, student achievement, cost effectiveness, educational planning, school dropout problems, student teaching, school demography, urban education, occupation studies, and the Educational Opportunities Survey.

46. Terrey, John N. Program budgeting and other newer management tools in higher education: A description and annotated bibliography. Seattle, Center for Development of Community College Education, University of Washington, June 1968. 62p. ED 024 144 MF $0.50 HC $3.20.

The first part of this document describes the following four new managerial tools available to the educational administrator: Planning-programing-budgeting; systems analysis; PERT or the critical path method; and the Delphi technique, which employs the systematic solicitation and collation of expert opinion to achieve consensus in the formulation of goals. The second part is an annotated bibliography which lists 73 books, reports, journal articles, bibliographies, and government publications related to the decision-making process, published between 1963 and 1968.

47. Thomas, J. Alan. An economic approach to systems analysis. Preliminary draft of paper prepared for annual meeting of the American Educational Research Association--Los Angeles, California, February 1969. 15p. ED 029 380 MF $0.25 HC $0.85.

The interests of economists in educational systems have taken two directions: (1) Concern for the interchange of resources between educational systems and the national economy, and (2) an interest in the production of education. In expressing the resource interchange, economists rely on the language of productivity. Of concern is the global contribution of educational systems to national economic efficiency. This type of analysis is relevant to such decisions as whether more or less money should be spent for education and how money should be allocated within educational systems. Model building is essential to systems analysis, and the models used for this type of study are cost-benefit models. Economic systems analysis is now being directed to an examination of the internal efficiency of education, which involves analysis of the way in which education is produced. This focus requires schools to be thought of as productive systems with interrelationships among people, units of space, and equipment determining the efficiency of the process. An administrator's

production function is developed and input-output studies, based on large-scale cross-sectional statistical analysis, are used to provide empirical guidelines for the improvement of allocation within educational units.

48. Wells, John Kimball. A study of the net expense of selected curricular programs at East Los Angeles College. Los Angeles: California University, 1966. 134p. ED 024 390 Not available from EDRS. (Available from University Microfilms, Inc., P.O. Box 1346, Ann Arbor, Michigan 48106--order number 67-455; MF $3.00, Xerography $6.40.)

Rapid growth, limited funds, and vast changes in business and industry have required modification of old and development of new courses in the junior college. A comprehensive review of educational expenditures therefore seemed justified. This study developed a plan of accounting and cost analysis to determine the net cost of certain curricular programs by determining (1) expenditures per weekly student contract hour for each day course taught in the fall 1964 semester, (2) sources of support for each such hour, and (3) the net cost of such an hour in each subject field and in each department. The average net cost per weekly student contact hour was found to be $17.38, within an extreme range. The difference between the most and the least expensive course was $387.04 per hour. The lowest figure, $4.17 for fundamentals of art, was accounted for by a high enrollment and low equipment costs. The highest, $392.21 for a course in bookkeeping machines, was due to small enrollment and expensive equipment. By subject field, the extremes were a general business course at $6.55 and one on office machines at $92.47 per hour. By department, the low and high were psychology at $7.25 and photography at $79.99 per hour. The procedures for collecting the information are described and the data are shown in tables. The figures provide one more criterion for deciding on retention, modification, or introduction of various courses or programs.

49. Western New York School Study Council. Development of an operational model for the application of planning-programming-budgeting systems in local school districts. Program budgeting note 1, introduction to program budgeting. Buffalo: Western New York School Study Council, October 1968. 11p. ED 028 539 MF $0.25 HC $0.65.

Although the public is best served by governmental agencies which have integrated the major functions of planning, managing, and budgeting, it can be asserted that the planning function is paramount. A review of the evolution of public agency administration in the U.S. reveals that

until recent years the planning function has been largely overshadowed by management control concerns. This lack of coordinated planning has resulted in a myriad of incremental agency budgets based on the short term, parochial interests of individual agencies. The introduction of a planning-programing-budgeting system (PPBS) to the Defense Department in 1961 provided the impetus for the rapid ascendancy of the planning function in Federal program administration. Since PPBS requires public administrators to plan specific program objectives and to rationally select after systematic consideration of alternative means, those means most compatible with efficient achievement of interagency program goals, comprehensive long-range planning must supplement the traditional management and budgeting functions. Although the potential magnitude of PPBS as an administrative tool is yet unassessed, educational decision makers are expressing increased interest in the possible application of PPBS to school management.

50. Western New York School Study Council. Development of an operational model for the application of planning-programming-budgeting systems in local school districts. Program budgeting note 2, program budgeting in the Federal government. Buffalo: Western New York School Study Council, February 1969. 16p. ED 028 540 MF $0.25 HC $0.90.

Many educational administrators are skeptical of school district attempts to use the planning-programing-budgeting systems (PPBS) tool. This skepticism seems, in large part, to be the result of two factors: (1) A general lack of understanding of the concrete operational steps involved in the implementation of PPBS, and (2) a feeling that the qualitative nature of educational objectives would inhibit the utility of such a tool in educational administration. A review of the Federal Bureau of the Budget Guidelines concerning PPBS implementation in Federal agencies coupled with an analysis of PPBS staffing requirements should help the administrator understand the process of practical implementation. The generally positive evaluation of the contributions of PPBS made by administrators of such Federal agencies as the United States Information Agency, the Agency for International Development, the State Department, and the Peace Corps serve as evidence of the utility of PPBS in organizational units faced with the difficulties of measuring qualitative objectives. The experience of these agencies may encourage school districts to experiment with PPBS.

51. Williams, Harry. Planning for effective resource allocation in universities. Washington, D.C.: American Council on Education, 1966. ED 014 158. Not available from EDRS. (Available from the American Council on Education, 1785 Massachusetts Avenue, N.W., Washington, D.C. 20036; 78 p., $2.50.)

A program budget is a policy and planning document whose goal is to define program elements at as high a level of aggregation as possible while remaining consistent with a desirable level of homogeneity. There are three major phases of program budgeting-planning, programing, and budgeting. Discussions of a university budget, decision matrices in university budgeting, program budgeting in a university, the requirements of program budgeting in universities, and the problems of establishing a program budgeting system in universities lead to eight major conclusions: (1) The application of program budget methods would not preclude the use of most existing university organizational structures; (2) the resources used by a university and the university output in teaching, research, and public services can be related in a way that is meaningful to administrators; (3) annual budgets should be derived in the context of an extended-year program, which in turn should be developed and evolved within the context of a university-wide long-range plan; (4) procedures are needed for periodically appraising each element process; (5) an analytical staff is necessary to study the establishment and definition of program elements and major programs, and to appraise their operations; (6) the annual budget derived from a program system should permit intrauniversity comparison; (7) there are likely to be nonhomegeneous activities occurring in the university which are difficult either to aggregate into major programs or to allocate to defined program elements; and (8) present university budgets serve very well the necessary task of meeting the requirements for legal and fiduciary accounting for funds received and expended by the university.

SUBJECT INDEX

Abstracts, 46

Accounting, 20,23,32

Administration, 50

Administrative Personnel, 14

Annotated Bibliographies, 18,47

Bibliographies, 5

Budgeting, 38,41

Budgets, 17,45,52

Campus Planning, 10

Case Studies, 9

Collective Negotiation, 17

College Housing, 10

Comprehensive High Schools, 12

Computer Oriented Programs, 42

Cost Effectiveness, 2,3,5,10,11,12, 13,15,18,20,21,23,24,25,28,30, 31,32,35,37,38,41,42,43,46,48

Costs, 13,15,19,34

Critical Path Method, 40

Data Collection, 22

Day Care Services, 15

Decision Making, 6,8,35,39

Decision Making Skills, 42

Disadvantaged Youth, 2

Dropout Prevention, 9

Economic Research, 10,37

Economics, 5

Educational Administration, 27

Educational Benefits, 9,19,34,37

Educational Economics, 20,48

Educational Finance, 19,24,38,45, 52

Educational Improvement, 3,35

Educational Objectives, 19,30,34

Educational Planning, 16,18,27, 29,30,33,35,40

Educational Programs, 32

Educational Quality, 13

Educational Research, 6,8,17,28

Elementary Schools, 2,3

Equal Education, 3,46

Expenditure per Student, 4,13

Expenditures, 49

Evaluation Methods, 28

Facility Requirements, 10

Federal Government, 51

Game Theory, 42

General Education, 4

Graduate Surveys, 21

Groundskeepers, 25

Higher Education, 22, 23, 25, 26, 41, 45, 47, 52

Information Systems, 7

Input Output Analysis, 36

Institutional Research, 22

Junior Colleges, 49

Landscaping, 25

Literature Reviews, 40

Management, 6, 7, 8, 14

Master Plans, 41

Mathematics, 42

Methodology, 13, 39

Methods Research, 21

Models, 1, 2, 20, 39, 40

Objectives, 51

Operations Research, 5, 6, 7, 8, 16

Organization, 33

Personnel Policy, 15

Planning, 36

Post Secondary Education, 4

Professional Recognition, 14

Program Budgeting, 7, 14, 16, 17, 18, 19, 24, 26, 27, 29, 31, 32, 33, 34, 35, 36, 38, 39, 40, 44, 45, 47, 50, 51, 52

Program Costs, 1, 4, 9, 12, 22, 43, 49

Program Effectiveness, 1

Program Evaluation, 1, 11, 28, 30, 31, 51

Program Planning, 11, 18, 31, 41, 44, 50, 51

Public Schools, 24, 32

Reports, 23

Research Reviews (Publications), 37

Resource Allocations, 11, 34, 36, 45, 52

School Accounting, 14

School Administration, 29

School Demography, 46

School Districts, 33, 51

Secondary Schools, 2, 3

Seminars, 44

Simulation, 26

Standards, 25

Statistical Analysis, 21

Student Costs, 49

Superintendent Role, 33

Systems Analysis, 5, 9, 14, 24, 26, 36, 38, 47, 48

Systems Approach, 17, 29, 39, 43

Systems Concepts, 6, 8

Teacher Education, 43

Teaching Load, 22

Technical Reports, 46

Unit Costs, 22, 49

Universities, 20

University Administration, 26

Urban Schools, 16

Vocational Education, 4, 9, 11, 12, 21, 28, 30, 31, 37, 44

Vocational High Schools, 12